

WHAT IS CLAIMED IS:

1. A digital camera that creates an image signal through catching a subject light, the digital camera comprising:

an image taking lens, which is variable in a focal length, comprising a plurality of lenses including a focus lens arranged on an optical axis, wherein a focusing is performed by a movement of the focus lens;

a lens barrel that incorporates therein the image taking lens, having in front an aperture through which the image taking lens appears and having in rear an internal space defined by a wall, the lens barrel being free in extension and collapse and performing a focal length control; and

a solid state imaging device that receives the subject light formed by the image taking lens to create the image signal, the solid state imaging device being disposed at a position projecting from the wall to the internal space and being supported by the wall,

wherein the lens barrel has a lens advancing and saving mechanism in which at the time of the collapse of the lens barrel, the focus lens is saved to a hollow portion divided by the solid state imaging device and the wall beside the solid state imaging device, the hollow portion being formed by the fact that the solid state imaging device is disposed at a position projecting from

the wall, and at the time of the extension of the lens barrel, the focus lens is advanced onto an optical axis of the image taking lens.

5 2. A digital camera according to claim 1, wherein the lens barrel has a focus lens guide frame that moves in the optical axis direction in accordance with the extension and the collapse so as to determine a position related to the optical axis direction of the focus lens, and a focus
10 lens holding frame that holds the focus lens and is pivotally supported by the focus lens guide frame, the focus lens holding frame causing the focus lens to revolve on the optical axis of the image taking lens at the time of the extension, and the focus lens holding frame causing the
15 focus lens to revolve on the hollow portion at the time of the collapse.

 3. A digital camera according to claim 2, wherein the focus lens holding frame is enabled in a direction that
20 the focus lens is revolved on the optical axis,

 the wall has a revolving affecting section having a geometry projecting into the internal space, the revolving affecting section being in contact with the focus lens holding frame at the time of the collapse to affect
25 revolving of the focus lens holding frame, and

 the focus lens holding frame has an affect receiving section that is pushed by the revolving affecting

section at the time of the collapse so that the focus lens
revolves into the hollow portion.

4. A digital camera according to claim 3, wherein
5 the focus lens holding frame causes the focus lens to
advance onto the optical axis of the image taking lens by
affect of the enabling, at the time of the extension, in
such a manner that the affect receiving section is
separated from the revolving affecting section.

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5. A digital camera according to claim 3, wherein
the affect receiving section is an object shaped as a plate
moving to the wall side while rotating around the periphery
of the revolving affecting section through pushing by the
15 revolving affecting section, at the time of the collapse,
the object shaped as a plate being inclined with respect to
the optical axis.

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6. A digital camera according to claim 3, wherein
the revolving affecting section has a taper on the top, and
the affect receiving section causes the focus lens
to be saved from the optical axis of the image taking lens
to the hollow portion through revolving by means of pushing
by the taper of the revolving affecting section, at the
25 time of the collapse.

7. A digital camera according to claim 1, wherein

the digital camera further comprises a light quantity control member that moves in one united body together with the focus lens in the optical axis direction of the image taking lens stored in the lens barrel to control a light quantity of the subject light passing through the image taking lens, and

the lens advancing and saving mechanism provides such a performance that at the time of the collapse of the lens barrel, the light quantity control member is saved together with the rear elements lens to the hollow portion, and at the time of the extension of the lens barrel, the light quantity control member is advanced together with the focus lens onto the optical axis of the image taking lens.

8. A digital camera according to claim 7, wherein the light quantity control member consists of an electrooptical element.

9. A digital camera according to claim 7, wherein the light quantity control member is an aperture member that controls an aperture caliber to control the subject light passing through the image taking lens.

10. A digital camera according to claim 8, wherein the light quantity control member is an aperture member that controls an aperture caliber to control the subject light passing through the image taking lens.

11. A digital camera according to claim 7,
wherein the light quantity control member is a shutter
member that controls a shutter speed to control the subject
5 light passing through the image taking lens.

12. A digital camera according to claim 8,
wherein the light quantity control member is a shutter
member that controls a shutter speed to control the subject
10 light passing through the image taking lens.

13. A digital camera that creates an image signal
through catching a subject light, the digital camera
comprising:

15 an image taking lens, which is variable in a focal
length, comprising a plurality of lenses including a focus
lens arranged on an optical axis, wherein a focusing is
performed by a movement of the focus lens;

a lens barrel that incorporates therein the image
20 taking lens, having in front an aperture through which the
image taking lens appears and having in rear an internal
space defined by a wall, the lens barrel being free in
extension and collapse and performing a focal length
control; and

25 a solid state imaging device that receives the
subject light formed by the image taking lens to create the
image signal, the solid state imaging device being

supported by the wall,

wherein the lens barrel has a focus lens guide frame that moves in the optical axis direction in accordance with the extension and the collapse so as to determine a position related to the optical axis direction of the focus lens, and a focus lens holding frame that holds the focus lens and is pivotally supported by the focus lens guide frame, the focus lens holding frame causing the focus lens to revolve on the optical axis of the image taking lens at the time of the extension, and the focus lens holding frame causing the focus lens to revolve on a saving position out of the optical axis of the image taking lens at the time of the collapse.

14. A digital camera according to claim 13, wherein the focus lens holding frame is enabled in a direction that the focus lens is revolved on the optical axis,

the wall has a revolving affecting section having a geometry projecting into the internal space, the revolving affecting section being in contact with the focus lens holding frame at the time of the collapse to affect revolving of the focus lens holding frame, and

the focus lens holding frame has an affect receiving section that is pushed by the revolving affecting section at the time of the collapse so that the focus lens revolves into the saving position.

15. A digital camera according to claim 14,
wherein the focus lens holding frame causes the focus lens
to advance onto the optical axis of the image taking lens
by affect of the enabling, at the time of the extension, in
5 such a manner that the affect receiving section is
separated from the revolving affecting section.

16. A digital camera according to claim 14,
10 wherein the affect receiving section is an object shaped as
a plate moving to the wall side while rotating around the
periphery of the revolving affecting section through
pushing by the revolving affecting section, at the time of
the collapse, the object shaped as a plate being inclined .
15 with respect to the optical axis.

17. A digital camera according to claim 14,
wherein the revolving affecting section has a taper on the
top, and

20 the affect receiving section causes the focus lens
to be saved from the optical axis of the image taking lens
to the saving position through revolving by means of
pushing by the taper of the revolving affecting section, at
the time of the collapse.

25 18. A digital camera that creates an image signal
through catching a subject light, the digital camera

comprising:

an image taking lens, which is variable in a focal length;

5 a light quantity control member that controls a light quantity of the subject light passing through the image taking lens, and

10 a lens barrel that incorporates therein the image taking lens, having an internal space having in front an aperture through which the image taking lens appears, the lens barrel being free in extension and collapse;

wherein the lens barrel has a light quantity control member advancing and saving mechanism in which at the time of the collapse of the lens barrel, the light quantity control member is saved to a predetermined light quantity control member saving position out of the optical axis of the image taking lens, and at the time of the extension of the lens barrel, the light quantity control member is advanced onto the optical axis of the image taking lens.

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